

REMARKS

Claims in the case are 1, 2, 4, 7, 10 and 11, upon entry of this amendment. Claims 1, 2, 4 and 7 have been amended, Claims 10 and 11 have been added, and Claims 3, 5 and 9 have been cancelled herein. Claim 6 was previously cancelled in an Amendment dated 7 December 2000. Claim 8 was previously cancelled in a Preliminary Amendment dated 6 June 2000.

Basis for added Claims 10 and 11 is found at page 9, lines 14-17 of the specification.

Claim 1 has been amended to incorporate the subject matter of Claim 3 therein, with regard to the reactor being a static mixer. Additional amendments to Claim 1 with regard to the reaction components (A)-(C) and formation of thermoplastic polyurethane elastomer within the static mixer with a residence time of less than 5 seconds is found at page 8, line 17 through page 9, line 17, and in particular at page 9, lines 14-17 of the specification.

Claims 2, 4 and 7 have been amended as to form, e.g., by beginning each claim with a definite article, replacing "according to" with --of--, and replacing "characterized in that" with --wherein--. In addition, Claim 4 has been amended to change its dependence from Claim 3 (which has been cancelled herein) to Claim 1.

In the Decision on Appeal (dated 23 July 2003), the Board reversed the Examiner's rejections of Claims 1, 3-5, 7 and 9 under 35 U.S.C. §102(b) as being anticipated by United States Patent No. 3,963,697 (Ulrich et al), and under 35 U.S.C. §102(e) as being anticipated by United States Patent No. 5,739,252 (Kirchmeyer et al). In the paragraph bridging pages 5 and 6 of the Decision, the Board stated, "The Examiner has not directed us to evidence that the inventions of either Ulrich or Kirchmeyer meet the claimed temperature requirement." At page 6 of the Decision, the Board further stated, "Under these circumstance[s], we cannot conclude that the Examiner has met the minimum threshold of establishing inherency under 35 U.S.C. §102."

The Board affirmed rejections of Claims 1-5, 7 and 9 as being unpatentable under 35 U.S.C. §103(a) over the combination of Ulrich et al and United States

Patent No. 3,642,964 (**Rausch et al**); and Claims 1-5, 7 and 9 as being unpatentable under 35 U.S.C. §103(a) as obvious over the combination of Kirchmeyer et al and Rausch et al.

Claims 1-5, 7 and 9 stand rejected as being unpatentable under 35 U.S.C. §103(a) over the combination of Ulrich et al and Rausch et al. This rejection is respectfully traversed in light of the amendments herein and the following remarks.

Applicants' claimed process involves introducing and reacting the polyisocyanate component (A) and the active hydrogen component (B) in a reactor under conditions such that the residence time of components (A) and (B) within the reactor is less than 5 seconds.

Ulrich et al disclose the preparation of polyurethane elastomers in an extruder (abstract, and column 2, lines 53-64). Ulrich et al disclose the residence time of the reactants within the extruder as being 0.8 to 4 minutes (i.e., a minimum extruder residence time of 48 seconds). See column 12, lines 51-56 of Ulrich et al.

Rausch et al disclose a process for preparing thermoplastic polyurethanes in an extruder (abstract). Rausch et al disclose a residence time in the feed zone of the extruder of 1 to 6 seconds (column 6, lines 40-46); and a residence time in the mix zone of the extruder of 6 to 50 seconds (column 7, lines 35-39). The residence time in the extrusion zone of the extruder is disclosed by Rausch et al as not being crucial (column 8, lines 36-39). In the examples, Rausch et al disclose an extrusion zone residence time of 50 seconds (column 11, lines 36, and column 12, line 69). As such, Rausch et al disclose an extruder residence time that is greater than 7 seconds. In the examples, Rausch et al disclose extruder residence times of: 150 seconds (examples 1-3, column 11, lines 29-36, column 12, lines 1-2, and column 12, lines 65-69); and 40 seconds (example 4, column 13, lines 47-49).

To render a claim obvious, the references must teach or suggest all claim limitations. *SDS USA, Inc. v. Ken Specialties, Incorporated*, 122 F.Supp.2d 533, 543 (D. NJ 2000). The claimed invention must be considered as a whole in deciding the question of obviousness. *Litton Industrial Products Inc. v. Solid State Systems Corp.*, 755 F.2d 158, 164 (Fed. Cir. 1985).

Ulrich et al and Rausch et al, either alone or in combination do not disclose, teach or suggest forming a thermoplastic polyurethane elastomer in a reactor (e.g., a static mixer) under conditions such that the residence time within the reactor is less than 5 seconds.

In light of the amendments herein and the preceding remarks, Applicants' claims are deemed to be unobvious and patentable over the combination of Ulrich et al and Rausch et al. Reconsideration and withdrawal of this rejection is respectfully requested.

Claims 1-5, 7 and 9 stand rejected as being unpatentable under 35 U.S.C. §103(a) over the combination of Kirchmeyer et al and Rausch et al. This rejection is respectfully traversed with regard to the amendments herein and the following remarks.

Kirchmeyer et al disclose the preparation of thermoplastic polyurethaneurea elastomers by first mixing the isocyanate and active hydrogen reactants in a first static mixer (under conditions such that no reaction occurs between these reactants), and then reacting the mixed reactants in a second static mixer (abstract). The residence time in the first static mixer is disclosed by Kirchmeyer et al as being 0.01 to 5 seconds (column 6, lines 28-35). The residence time in the second static mixer is disclosed by Kirchmeyer et al as being 0.1 to 10 minutes (i.e., a minimum residence time of 6 seconds) (column 6, lines 61-62). As such Kirchmeyer et al disclose a total residence time of at least 6.01 seconds.

Rausch et al have been discussed previously herein. Rausch et al disclose a process for preparing thermoplastic polyurethanes in an extruder (abstract). Rausch et al disclose a residence time in the feed zone of the extruder of 1 to 6 seconds (column 6, lines 40-46); and a residence time in the mix zone of the extruder of 6 to 50 seconds (column 7, lines 35-39). The residence time in the extrusion zone of the extruder is disclosed by Rausch et al as not being crucial (column 8, lines 36-39). In the examples, Rausch et al disclose an extrusion zone residence time of 50 seconds (column 11, lines 36, and column 12, line 69). As such, Rausch et al disclose an

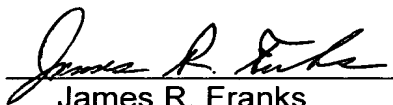
extruder residence time that is greater than 7 seconds. In the examples, Rausch et al disclose extruder residence times of: 150 seconds (examples 1-3, column 11, lines 29-36, column 12, lines 1-2, and column 12, lines 65-69); and 40 seconds (example 4, column 13, lines 47-49).

Kirchmeyer et al and Rausch et al, either alone or in combination do not disclose, teach or suggest forming a thermoplastic polyurethane elastomer in a reactor (e.g., a static mixer) under conditions such that the residence time within the reactor is less than 5 seconds.

In light of the amendments herein and the preceding remarks, Applicants' claims are deemed to be unobvious and patentable over the combination of Kirchmeyer et al and Rausch et al. Reconsideration and withdrawal of this rejection is respectfully requested.

In light of the amendments herein and the preceding remarks, Applicants' presently pending claims are deemed to define an invention that is unanticipated, unobvious and hence, patentable. Reconsideration of the rejections and allowance of all of the presently pending claims is respectfully requested.

Respectfully submitted,

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